Technology Overview

Locally advanced and metastatic melanoma are well known to be resistant to current therapies. The survival rate for patients with Stage IV melanoma is low, with a median survival being less than 1 year. In a first-in-human case study, Fred Hutch researchers demonstrated that cytotoxic T lymphocytes specific for MART-1 combined with an anti-CTLA4 agent were able to induce long-term remission in a melanoma patient previously resistant to both modalities. Based off these findings, Dr. Chapuis and her team are engineering high affinity T-cell receptors specific for MART-1 to enhance the efficacy of monoclonal engineered TCRs and minimize the reliance on checkpoint inhibitors, such as CTLA-4.

Applications

- Treatment of melanoma and other MART-1 expressing tumors

Advantages

- MART-1 has been demonstrated as a viable clinical target for adoptive T cell therapy
- Synergy with anti-CTLA4 and other checkpoint inhibitors

Market Overview

Melanoma is the sixth most common cancer in the US with an incidence of ~75,000 annually and a prevalence of ~1 million patients. The global market for melanoma is anticipated to expand fourfold and reach an estimated $5.64 B by 2023. While immunotherapies targeting T-cell checkpoint inhibition are major market drivers, there are a significant number of patients who do not benefit from these therapies or who are unable to tolerate the toxicity. Alternative approaches are still needed to address this unmet medical need.

Investigator Overview

Aude Chapuis, MD and Phil Greenberg, MD, Clinical Research Division